EL009036

INTERNAL LETTER

NORTH AMERICAN AVIATION, INC.

FL11-4-4820

DATE . 3 December 1964

TO . E. G. Spencer
ADDRESS . 096-211
(Show Dept., Group, Div. & Location) Rocketdyne, SanSu

FROM . R. E. Fenton
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SUBJECT . Task Summary - Test Systems Unit - Period Ending 1 December 1964

The following is a list of the tasks currently assigned to the Test Systems Unit. This list is not in order of importance.

Additions since the last report are shown in red. Completed work is indicated by striking through the task. Where possible, close out documents are listed.

ALTITUDE SIMULATION

1. Support of Delta-1 altitude system.
2. Development program.
3. Support LEM activation.
4. Aerodynamic spike for Research.
5. J-2T altitude system.
6. Support of J-2 ASI altitude system.
7. VTS-3A diffuser mod.

FLAME DEFLECTORS

1. Development program and F-1 cold flow report.
2. Saturn II activation and heat flux study.
3. Checkout of F-1 production stands.
4. Modification of Canyon II and III units.

ACOUSTIC STUDIES

1. Follow-up NASA studies.
2. Review Coca S-II test hazards.

DESIGN REVIEW

1. Define responsibilities in detail.

FORM 131-R-1 NEW 1-63

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MECHANICAL ELEMENTS

1. Seals and gaskets.
   (a) Evaluation program. - Esp. hydrogen systems.
   (b) Large diameter cryogenic seals.
   (c) High pressure storage bottle closures.
2. Propellant tank diffuser.
   (a) Development program - Esp. high pressure.
   (b) Issue memo on design criteria.
3. Bellows and flexible hoses.
   (a) ~~Bellows for Bravo 2 to eliminate failures.~~ Total system re design by 083.
4. Tank screens and anti-vortex baffles.
   (a) Issue memo on design criteria - Literature survey, etc.
5. Filters and separators.
   (a) Installation of cryogenic fill point filters.
   (b) Follow-up centrifugal separator for VTS-3A.
6. Frantz screens.
7. Heat exchangers.
8. Pressure vessels.
   (a) Design and coding of items fabricated by SSFL shops.
   (b) Inventory and control.
9. Coping of relief valves.
10. Modify stand pre-valves to fail safe.

CONTAMINATION PROBLEMS

1. Propellants and gases.
   (a) Establish contamination limits at PFL.
   (b) Establish nitrogen dilution sampling procedures.
2. Tank cleaning.
   (a) Establish procedures to reduce required engineering support.
3. Procedure for cleaning bellows and complicated ducting.
4. Facility specification.
5. Support of Space Engines contamination control.
6. PFL fuel system contamination.
7. Prevention of GN_2 system contamination by storables.
8. NTO moisture and assay problem.
9. Mydyne 2-hydrazyne V assay problems.
10. Definition of LOX clean (EFL request).
11. Standardize sampling systems for fuels, oxidizers and pressurants.

096-211 FACILITIES ENGINEER

1. Facility Planning - Review all 022 requests.
2. Facility certification - Write Off.
3. Define 211 facilities - system schematics.
4. ~~Prepare detailed task list.~~ Complete - issued monthly.

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PROJECT ASSIGNMENTS

1. Flox Test Facility - Alfa-3 and CTL-1.
2. Lance Test Facility and MCA.

HAZARDS ANALYSIS

1. Saturn S-II Hazards Suppression Program.
2. Standardize supply system for air driven equipment.
3. Blast screen and flame shield development.

ROTATING MACHINERY

1. Compressors
   (a) Activate Coca compressor.
   (b) Backup unit for Coca.
2. Vacuum pumps.
3. Cryogenic pumps.
   (a) Purchase and evaluate new transfer pumps.
   (b) Develop inhibited LOX compatable lube for A-3 transfer pumps.

SUSTEMS ANALYSIS

1. Propellant feed systems.
   (a) ~~Gemini propellant flow problem - NFL~~ appears to be resolved - will reinstate if recurs.
   (b) USEFF flow decay problem.
2. Gas Supply Systems
   (a) Reduction of SSFL relief devices. - CTL-3 left to do.
   (b) Test responsible engineer on N_2 cascade modification.
   (c) Optimize CTL-5 bottle bank.
   (d) CTL-5 8" ball relief valve problem.
   (e) Write operating procedures.
   (f) CTL-5 GH_2 compressor incident report.
   (g) Coordination and Design Review of SSFL H_e distribution system.
   (h) Test Responsible Engineer for Saturn II N_2 system uprating and 5000 psi H_e supply system.
   (i) Coordination and Design Review, Alfa-Bravo N_2 Cascade uprating.
3. Hydraulic systems.
4. Propellant storage and transfer systems.
   (a) Support of SPA.

R. E. Fenton

R. E. Fenton, Supervisor
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Analysis and Equipment Section

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